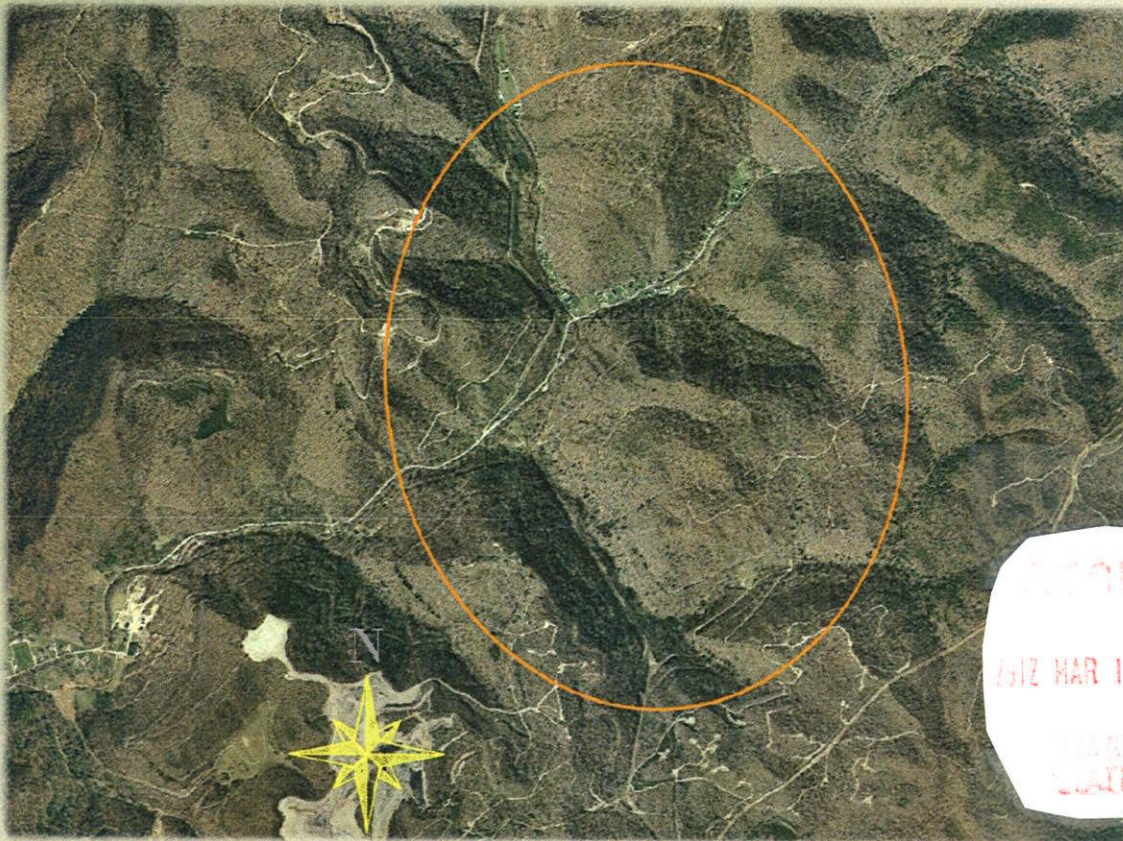


**Expression of Interest
Professional Engineering Design Services and
Construction Monitoring Services
for
Witcher Creek Portals & Refuse Design
Kanawha County, West Virginia**

RFQ Number DEP15601



Submitted to:

State of West Virginia
Department of Administration
Purchasing Division
Charleston, West Virginia



Submitted by:

Michael Baker Jr., Inc.
Charleston, West Virginia

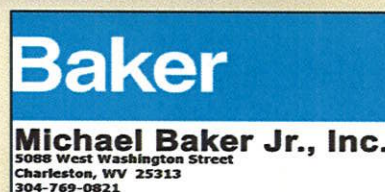
March 15, 2012

Baker

Project Understanding

We have carefully reviewed the EOI and performed a thorough site reconnaissance on March 13, 2012. Based on the EOI Project Description and our site evaluation, we understand that this site has the following key design/construction elements:

- Sediment and Erosion Control Measures
 - Clearing and Grubbing
 - Subsurface Investigation
 - Mine Water Level Testing
 - Soil and Water Analysis
 - Drainage Channels and Underdrain Design
 - Remove Miscellaneous Debris Throughout Sites
- Properly Seal Portals Above the Myers Home – Site 1



➤ Bonded Road Leading to Site 2



➤ Properly Seal Auger Holes – Site 2



➤ Properly Seal Auger Holes – Site 2



➤ Existing Treatment Pond Near Site 2



➤ Properly Seal Portal Behind Beulah Baptist Church – Site 3



➤ Properly Seal Open Portal – Site 3



➤ Properly Seal Open Portal – Site 3



➤ Stream Bank Erosion – Site 4



➤ Concrete Structure Near Old Portals – Site 4



➤ Properly Seal Drainage from Open Portals – Site 4



ATTACHMENT "B"

AML CONSULTANT CONFIDENTIAL QUALIFICATION QUESTIONNAIRE

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AML CONSULTANT CONFIDENTIAL QUALIFICATION QUESTIONNAIRE						Attachment "B"
PROJECT NAME Witcher Creek Portals & Refuse Design Kanawha County, West Virginia (DEP15601)		DATE (DAY, MONTH, YEAR) March 15, 2012		FEIN 25-1228638		
1. FIRM NAME Michael Baker Jr., Inc.		2. HOME OFFICE BUSINESS ADDRESS 4301 Dutch Ridge Road Beaver, Pennsylvania 15009		3. FORMER FIRM NAME		
4. HOME OFFICE TELEPHONE 304-769-0821		5. ESTABLISHED (YEAR) 1940	6. TYPE OWNERSHIP Individual Partnership <u>Corporation</u> Joint-Venture	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES NO		
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE Michael Baker Jr., Inc./ 5088 West Washington Street, Charleston, WV 25313/ 304.769.2154 / Russell E. Hall / 7 (Chas. WV), William D. Trimboth / 22 (Beaver, PA)						
8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM Russell E. Hall, Assistant Vice President (304) 769-0821		8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS William D. Trimboth, Vice President 724.495.4302				
9. PERSONNEL BY DISCIPLINE (Bold Lettering Indicates Minimum Design Team Members)						
243 ADMINISTRATIVE 11 ARCHITECTS <u>3</u> BIOLOGISTS <u>67</u> CADD OPERATORS 1 CHEMICAL ENGINEERS <u>39</u> CIVIL ENGINEERS 47 CONSTRUCTION INSPECTORS / Mgrs. 67 DESIGNERS 0 DRAFTSMEN	2 ECOLOGISTS 1 ECONOMISTS 2 ELECTRICAL ENGINEERS 29 ENVIRONMENTALISTS 0 ESTIMATORS <u>23</u> GEOLOGISTS 2 HISTORIANS 13 HYDROLOGISTS	1 LANDSCAPE ARCHITECTS 9 MECHANICAL ENGINEERS <u>2</u> MINING ENGINEERS 1 PHOTOGRAMMETRISTS 10 PLANNERS: URBAN/REGIONAL 5 SANITARY ENGINEERS 9 SOILS ENGINEERS 6 SPECIFICATION WRITERS	<u>35</u> STRUCTURAL ENGINEERS <u>21</u> SURVEYORS/Technicians 5 TRAFFIC ENGINEERS 82 OTHER 29 (Project Managers)	765 TOTAL PERSONNEL (Pittsburgh Area Offices)		
TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 13 * RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.						
10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? _ YES _ NO N/A						

11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED. Attach "AML Consultant Confidential Qualification

NAME AND ADDRESS: NGE Consulting (IF Required) 650 MacCorkle Avenue West St. Albans, West Virginia, 25177	SPECIALTY: Drilling and Soil/Rock Analysis	WORKED WITH BEFORE ☒ Yes (8+ years) ☐ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ☐ Yes ☐ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ☐ Yes ☐ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ☐ Yes ☐ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ☐ Yes ☐ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ☐ Yes ☐ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ☐ Yes ☐ Yes ☐ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ☐ Yes ☐ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ☐ Yes ☐ No

12. RELEVANT EXPERIENCE. Include number of projects per each discipline

A. Is your firm's personnel experienced in Abandoned Mine Lands Remediation/Mine Reclamation Engineering?

YES

Description and Number of Projects:

Baker has been assisting state and federal agencies with abandoned mine land (AML) restoration and acid mine drainage (AMD) remediation since 1977. Baker's experience began with Operation Scarlift and now includes well over 200 AML/AMD remediation projects ranging from subsidence control, mine sealing, reclamation of mine refuse piles, strip pit and high wall; drainage improvements, revegetation, stream relocation, restoration of streams and wetlands, landslide correction, and replacement of water supplies affected by abandoned mine lands to abatement of AMD problems. Baker has been assisting West Virginia Department of Environmental Protection with Abandoned Mine Lands Remediation/Mine Reclamation Engineering design services ever since WVDEP initiated its AML Reclamation Program in 1983. In addition to WVDEP, our also currently assisting PADEP with AML reclamation and AMD remediation designs. The "AML and related Project Experience Matrix" table provided at the end of this CCQQ shows our experience on waterline extension and AML related projects for different state agencies and for private clients.

B. Is your firm experienced in Soil Analysis?

YES

Description and Number of Projects:

In designing AML reclamation projects, generally three types of soil analysis are needed. These analyses may include: a) geotechnical analysis, b) soil analysis for revegetation potential (pH, Acid Base Accounting, Nutrients) and c) soil analysis for hazardous materials. Baker is involved in selecting and collecting the soil samples and analyzing the results of laboratory testing as required for design. Laboratory testing is performed by a subcontractor. Of the thirty (30) most recent AML projects, Baker was involved in soil analysis for 19 projects.

C. Is your firm experienced in hydrology and hydraulics?

YES

Description and Number of Projects:

Baker's hydrology and hydraulic staff for AML/AMD remediation design are experts in the application of hydraulic models that include HEC-1, HEC-2, HEC-RAS, HY8, TR20, TR55, HAESTADS PONDS 2, FLOWMASTER, KYPIPE 2, CYBERNET, SEDCAD 4, UNET, and DAMBRK. Baker applies this experience to services such as stormwater management; culvert analysis; hydrologic and hydraulic studies; storm sewer design; floodplain modeling; channel design; watershed planning; energy dissipation; and waterline extension and distribution.

Expertise in hydrology and hydraulics is essential in any AML reclamation/AMD remediation design. Of the thirty (30) most recent AML projects, twenty six (26) projects needed hydrology/hydraulics expertise of the AML/AMD design group.

12. RELEVANT EXPERIENCE. Include number of projects per each discipline

D. Does your firm produce its own Aerial Photography and Develop Contour Mapping?

YES Description and Number of Projects:

Since 1983 Baker has been designing AML/AMD remediation projects for WVDEP. For all the projects to date, Baker was provided by WVDEP with contour maps developed from aerial photography of the project site. Baker's responsibility was to verify the topographic map by check field surveying.

Baker has a survey and photogrammetric department with a staff of 82. Baker routinely performs aerial photography and contour mapping for federal and several state agencies as well as for private clients. Baker's Survey and Photogrammetric Department is as old as the company itself. During the last five years Baker has completed more than 50 mapping projects. Some examples are listed as follows:

Updating Boundary/Site Improvements and Utility Survey – 23 LPOEs, North and South US Borders, US-VISIT (Photogrammetric Mapping and Surveying Services)

Rio Grande Valley Border Fence Boundary Surveys, Cameron and Hidalgo Counties, TX, U.S. Army Corps of Engineers, Fort Worth District (Metes and Bounds Surveys and Legal Deed Descriptions)

Land Port of Entry (LPOE) Aerial Mapping Refresh, North and South US Borders, Department of Homeland Security, US-VISIT (Mapping)

Sewer Infrastructure Location/Verification, Allegheny County, PA, 3 Rivers Wet Weather, Inc., (GPS or Conventional Survey Data by Others)

Open-End Contract for Surveying and Photogrammetric Mapping Services, Statewide Pennsylvania, Pennsylvania Department of Transportation (Through a series of nine open-end contracts, Baker has been providing surveying and mapping services to PennDOT continuously since 1986. Our current contract E01292 runs through November 2012)

Indefinite Delivery Contract A/E for Multidiscipline & Related Services for Dept. of Homeland Security and other Civil/Military Projects, U.S. Army Corps of Engineers, Fort Worth District (Surveying and Mapping)

Border Fence Project – PF225, Various Locations in TX, AZ, NM CA, U.S. Army Corps of Engineers, Fort Worth District (Aerial Photography, Analytical Aerotriangulation, Stereo Mapping Compilation, Digital Orthophotography, Horizontal and Vertical Control Surveys, Geodetic Surveys)

Land Port of Entry (LPOE) Aerial Mapping Refresh, North and South US Borders, Department of Homeland Security, US-VISIT (Aerial Photography, Stereo Mapping Compilation/Topographic Mapping, Horizontal and Vertical Control Surveys, Geodetic Surveys)

Digital Orthophoto Production, Scottsdale, AZ, City of Scottsdale (GPS Control Surveys, Color Aerial Photography, Analytical Aerotriangulation, Digital Terrain Modeling, Digital Contour Mapping, Digital Orthophotography)

Cuyahoga County, Ohio CEGIS, Cuyahoga County, Ohio, Cuyahoga County (Data Survey, GPS Ground Control, Digital Orthophotos, Parcel Mapping)

Coordinated County GIS, Allegheny County, PA, Allegheny County GIS Department (Aerial Photography, Digital Terrain Modeling, Color Digital Orthophoto Production, Map Edit)

12. RELEVANT EXPERIENCE. Include number of projects per each discipline

E. Is your firm experienced in domestic waterline design? (Include any experience your firm has in evaluation of aquifer degradation as a result of mining.)

YES

Description and Number of Projects

Baker, to date, has designed eight (8) domestic waterlines for WVDEP and countless others for clients in West Virginia, Pennsylvania, Ohio, and elsewhere. In general, for each of these projects, Baker performed field surveying of proposed routes, subsurface investigation for storage tank site foundations, water distribution system hydraulic modeling and analyses, pipeline design, storage tank sizing, sizing and designing booster pumping station, and electric and telemetric system. For McDowell County Public Water Supply System, Baker also designed a water treatment and filtration plant. Construction plans, specifications, cost estimate and bid schedules were prepared for each project.

Prior to designing each of the waterlines, under separate work directives from WVDEP, Baker performed water resources studies for each project area to determine if the pre-law mining had impacted the aquifer of the area from which the area residents got their water supply. Water resource studies involved evaluation of mining activities in the project area with regard to date and time of mining, and the effect of mining on the local aquifers and groundwater quality based on hydrogeologic data, resident interview, water sampling and testing. To date Baker has performed more than twelve (12) water resources studies.

F. Is your firm experienced in Acid Mine Drainage Evaluation and Abatement Design?

YES

Description and Number of Projects:

Baker is well experienced in the evaluation of acid mine drainage and the design of AMD abatement measures. Design experience includes both active and passive treatment system. Evaluation and design of AMD abatement system is based on the characterization of the AMD site as well as the flows and chemistry of the AMD. AMD sampling for chemical parameters as well as the flow measurements covering high and low flow periods are most important in developing AMD abatement system. To date Baker has evaluated and designed fourteen (14) AMD abatement systems. Three of these fourteen projects – one for PADEP (Dumans AMD Treatment), an active system, and the other two for the ODNR (Lindentree AMD Remediation and Mineral Zoar Road AMD Abatement), passive treatment systems, have been recently constructed and are currently in service except the Mineral Zoar Road AMD project which is under construction.

Baker has designed seven (7) AMD remediation projects for WVDEP. AMD remediation measures designed included: Open Limestone Channel (OLC), Anaerobic and Aerobic Wetlands and settling ponds, Limestone Sand dumping in the stream, and Alkaline Leach Bed/Anoxic Limestone Drains. Other AMD abatement designs were made for Baltimore and Nashville Districts of the U.S. Army Corps of Engineers.

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Init.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Trimbath, William, D., P.E. Vice President	10	16	7

Brief Explanation of Responsibilities

William D. Trimbath, P.E. is Vice President and Office Principal of Baker's engineering offices in western Pennsylvania. These offices provide civil, mining, municipal, geotechnical, pipelines, mapping and telecommunications services to a variety of clients. More than 100 Baker professional and technical employees serve our clients out of offices in Pittsburgh, Moon Township (Allegheny County) and Brighton Township (Beaver County) under the leadership of Mr. Trimbath.

Mr. Trimbath, who has been at Baker for over 20 years, will oversee general civil activities and management of projects and services provided by Baker teams in this location. He has over 34 years experience in civil, environmental and geotechnical engineering. Most recently he worked for Baker Environmental and managed \$100 million in Navy CLEAN activities including over 200 environmental investigation and remediation programs. He also has extensive experience in water and wastewater design and geotechnical construction.

Engineering Services. Pittsburgh Water and Sewer Authority (PWSA). Project Director. Baker has been providing services to PWSA since 1989 for a variety of projects including: Development of a Long-Term Control Plan for Combined Sewer Overflow; Fox Chapel Pump Station and rising Main; Feasibility Study of the Highland Park Reservoir No. 1 Cover; Herron Hill Reservoir Reconstruction and Cover Project; and the Bedford Reservoir Potable Water Storage Tank.

Dennison/Route 800 Reclamation Project for the *Ohio Department of Natural Resources (ODNR)* - Uncontrolled drainage and seepages from coal and clay mines causing metal precipitation in roadside ditch and over flowing onto a major high creating hazardous driving condition. The reclamation plan was developed following test drilling to identify AMD sources. Abatement design included an underdrain to intercept seepage, a sedimentation pond followed by wetland to precipitate iron, improving road-side ditch and the drainage outlet to nearby stream; preparation of construction plans, specifications, and cost estimate are part of this project.

Hardy Coal Company Bond Forfeiture Reclamation Project for the *Ohio Department of Natural Resources*. The project involved surveying and mapping, reviewing geological data, mine maps; and providing design of the reclamation measures for the site including environmental assessment, regarding, collection ditches, stream relocation, placement of soil cover revegetation; and preparation of construction plans, specifications and cost estimates.

Maple Run Portals and AMD Reclamation for the *West Virginia Division of Environmental Protection* - Test drilling, site grading, sealing mine openings, drainage design, AMD treatment with limestone beds and aerobic Wetland; preparation of construction plans, specifications, and cost estimate.

Emoryville Mine Complex Reclamation for the *West Virginia Division of Environmental Protection* - Test drilling, water quality date review and site survey; design of AMD abatement including open limestone channels, SAPS, aerobic wetlands, in-stream AMD treatment with limestone fines, E & S Control, drainage design including diversion and collection ditches and underdrain; site grading and revegetation; construction plans, specifications, and cost estimate.

Feasibility Study for Ecosystem Restoration, Ely and Pucker Creek Subbasins of Powell River, Virginia for the *Nashville District, U.S. Army Corps of Engineers* - Site evaluation including geotechnical investigation, review of water quality data, determination of AMD sources at four sites, evaluation of AMD abatement alternatives; AMD abatement design including SAPS Cells, open limestone channel, metal precipitation ponds, aerobic wetlands and alkaline soil amendment; site grading, mine seals, diversion and collection ditches, E & S control, stream relocation; and preparation of plans, cost estimate and feasibility report.

EDUCATION (Degree, Year, Specialization)

Doctoral Studies, Civil Engineering; M.S., 1978, Civil Engineering; B.S., 1974, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineers
American Society of Civil Engineers, Pittsburgh Geotechnical Group, Chairman, 1986-1987
Society of American Military Engineers, Environmental Action Committee, Secretary
Engineering Society of Western Pennsylvania

REGISTRATION (Type, Year, State)

Professional Engineer, 1978, PA

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Init.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Fogarty, Patrick, W., P.E., P.S. Senior Engineer	15	25	18
Brief Explanation of Responsibilities Mr. Fogarty is an Engineer and Surveyor responsible for the development of all types of civil, structural, environmental and transportation projects throughout West Virginia and surrounding states. He has more than twenty years of engineering experience and over ten years of experience with the WVDEP on AML planning, mapping and design assignments. Various types of AML projects include landslide correction including retaining wall design, site grading and drainage improvements, acid mine drainage collection and neutralization, water line upgrade and extensions, and various projects requiring site regrading and drainage upgrade. Work on these projects also included establishing horizontal and vertical control surveys for aerial photogrammetry mapping, baseline layout, referencing control points, generating check cross sections and site surveys including all physical and topographic features of each unique site civil design, utility relocations, property transfer, treatment design, and project management. Specific WVDEP/AML projects for which Mr. Fogarty has been personally responsible as Project Manager and Lead Design Engineer include the following: WVDEP14387, Harrison County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at six (6) sites at the Crooked Run #5 Complex in Harrison County near Clarksburg. WVDEP14176, Kanawha County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at four sites (Marmet (Wells Drive), Cabin Creek (Stapler), East Bank (Garten), and the Mill Hollow Complex) in eastern Kanawha County. Morris Creek Watershed Association AMD Treatment, Montgomery. Design of treatment systems for stream contamination due to pre-law mining activity within the Morris Creek Watershed near the City of Montgomery, West Virginia. Contamination sources were initially identified for four (4) particular areas within the watershed. Treatment systems were designed for each of the areas including: Stream Relocation and In-Stream Aeration (Upper Main Stem of Morris Creek), Anaerobic Wetland and Polishing Pond (Lower Main Stem of Morris Creek), Aerobic Wetland and Polishing Pond (Possum Hollow Branch of Morris Creek), and In-Stream Aeration (Black Snake Hollow of Morris Creek). The designs incorporated conventional and unconventional treatment processes for the removal of Iron, Manganese, Aluminum, and acidity. The assignment included the coordination of aerial photogrammetric mapping, geotechnical investigation, water sampling (for quality and flowrate) and the preparation of plans, specifications and individual property plats to include the treatment areas within the corporate boundary of the City of Montgomery. Norton-Harding-Jimtown PSD Waterline Extensions, Randolph County. The assignment included the coordination of aerial photogrammetric mapping, geotechnical investigation, and the preparation of plans and specifications for planned extensions to three communities (Pumkintown, Mabie, and Green). The project consisted of approximately 30,000 feet of 6-inch and 8-inch PVC SDR 21 water pipe, one new 50 gpm booster pump station, one 100,000 gallon water storage tank, fire protection and other appurtenances. Kilsyth (City of Mount Hope) Drainage Improvements, Fayette County. Drainage improvements to the intake site for the City of Mount Hope raw water pump station. The design of a circular reinforced concrete tank over a deep mine portal, the collection and rerouting of excess mine water and storm drainage. The design included phasing to assure continuous operation of the pump station during construction. Chief Logan State Park AMD, Logan County. Wet mine seals and open limestone channel design for the treatment acid mine drainage at numerous locations within the State Park. Additionally, Mr. Fogarty has specific training and expertise with Natural Stream Design having completed Levels I through IV of <i>Rosgen</i> Training through Wildland Hydrology Courses. Mr. Fogarty has also completed the Assessment and <i>Sediment-Based Design of Stream Restorations Short Course</i> through the University of Louisville, Stream Institute			
EDUCATION (Degree, Year, Specialization) B.S., 1985, Civil Engineering		REGISTRATION (Type, Year, State) Professional Engineer, 1990, WV; Professional Surveyor, 1993, WV Professional Engineer, 1996, OH; Professional Surveyor, 1996, OH Professional Engineer, 2000, KY; Professional Land Surveyor, 2001, KY	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Society of Civil Engineers International Right of Way Association American Planning Association			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Init.)	YEARS OF EXPERIENCE	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Chakravorti, N.K. Engineering Manager	30	30	13
Brief Explanation of Responsibilities Mr. Chakravorti has extensive knowledge and experience related to mining, geotechnical and material handling projects. His professional experience has encompassed research, project planning and analysis, project management and report preparation for both governmental agencies and private clients. He is responsible for conducting a wide range of technical studies and designs involving reserve analysis and mine planning; abandoned mine land reclamation, acid mine drainage abatement, coal preparation and waste disposal; material transport by overland conveyor, slurry and pneumatic pipelines; refuse reclamation, mine drainage, subsurface investigation and geotechnical analysis for the design of shafts, tunnels, highway pavements, bridge and building foundations; landslide correction; and mine subsidence control. Experience relevant to this project includes: Abandoned Mine Land Reclamation Projects for the <i>West Virginia Department of Environmental Protection (formerly WVDOE)</i>. Project Manager for over 100 of these AML projects. His responsibilities involved project management, development of concept design, and quality control on all phases of abatement design. The projects included reclamation of refuse piles, landslide corrections, designing surface drainage, subsidence stabilization, sealing mine openings, stream restoration/re-location, and evaluation and design of AMD abatement measures. Acid Mine Drainage Abatement (AMD) Feasibility Studies for the North Branch Potomac River Watersheds in Maryland and West Virginia, and for the Ely and Puckett Creek watersheds of Powell River basin in Virginia. Project Manager. These two projects were performed for <i>Baltimore District and Nashville District Corps of Engineers</i> respectively. Projects involved evaluation of the sites, AMD flow and characteristics, abatement alternatives, and designing of treatment systems including surface drainage, grading and reclamation of AMD sources, and development of construction costs for the AMD abatement measures. Surface and Underground Mine Permitting Projects for various coal mining companies in Pennsylvania. Project Manager. Projects involved site investigations, environmental inventory and sampling, and preparation of surface and underground mining activities permit applications in accordance with the requirements of the regulatory agencies. Projects also included designing and permitting of several shafts and portal facilities, refuse disposal sites and slurry impoundments. Management of Engineering Services Contracts for over 150 AML Projects in West Virginia, Ohio, Pennsylvania and for the Federal Office of Surface Mining. Principal Investigator and Coordinator. The projects required surveys, mapping, subsurface investigations, plans, specifications, and construction inspection. AML related problems included flood studies, watershed studies, stream restoration, mine subsidence, underground mine fires, mine drainage, vertical shaft filling, gob piles, landslides, refuse fires, grouting programs, and surface mine reclamation. Projects also included water supply extension design for AML problem area communities. Projects designed were over \$35 million in construction costs. Abandoned Mine Drainage Problem in the village of Barton, Ohio, for the <i>Ohio Department of Natural Resources</i>. Principal Investigator. Responsibilities included evaluation of the problems (hillside instability, acid mine discharge, and stream pollution) and recommendation and preliminary designs of abatement measures. Responsibilities also included evaluation of the abandoned gob piles for their stability and the recovery potential of secondary resources from them.			
EDUCATION (Degree, Year, Specialization) MS, 1977, Mining Engineering; MS Studies, 1975-76, Geotechnical Engineering; BS, 1960, Mining Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Institute of Mining, Metallurgical and Petroleum Engineers			
REGISTRATION (Type, Year, State) Professional Engineer, 1978, Pennsylvania			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Hynes, Gregory P., P.E. Project Manager/Senior Engineer	21	21	25
Brief Explanation of Responsibilities			
Mr. Hynes is an engineer with a background in reclamation of abandoned mine lands, including acid mine drainage abatement, earthwork and grading plans preparation, hydrologic and hydraulic analysis, and erosion and sediment control structures. He also has extensive experience in the design of water distribution systems, hydraulic structures, and sanitary collection systems; and permitting of mining facilities. At Baker, he has worked on over thirty abandoned mine land reclamation projects which include reclamation of coal refuse piles, sealing of mine portals, grouting for mine subsidence, treatment of passive and active water, evaluation of pre-law mining impacts on drinking water supplies, and restoration of stream channels. Many of these projects have been for the West Virginia Department of Environmental Protection, Abandoned Mine Lands and Reclamation Office. He has also served as project engineer for over 30 water distribution projects located in Ohio, Pennsylvania, and West Virginia.			
Wymer Portals and Refuse & Davidson Highway, Monongalia County, WV. <i>West Virginia Department of Environmental Protection.</i> Project Manager/Senior Engineer. Arranged for mapping and drilling by subconsultants, oversaw assistant engineers, performed research of geological data and mining maps, review of water quality data, preparation of USACE and WVDOH permits for stream channel relocation and highway crossings. Prepared construction plans and specifications and attendance at pre-bid and preconstruction meetings for the project which included erosion and sedimentation control measures, site grading, mine seals, bat gates, reestablished and relocated stream channels, open limestone channels, collection and diversion ditches, backfilling a dangerous highway, soil cover placement, and revegetation.			
Chalk Mountain Mine and Dump Site 4, Spruce Pine, N.C. <i>The Feldspar Corporation.</i> Project Manager. Duties included site investigation and preparation of disposal and reclamation plans for a strip mine including E&S controls and ponds, surface water ditches, soil cover placement, and revegetation. The project included review of available site rock and soils data, design and preparation of construction plans, narratives, and specifications.			
Miller Mountain Feasibility Study, Preston County, WV. <i>West Virginia Department of Environmental Protection.</i> Senior Engineer. Provided conceptual water system evaluation and distribution system extension requirements including design, cost estimate, and narrative as part of a feasibility report which assessed pre-law mining impacts to local groundwater and provided water supply alternatives including the extension of a nearby distribution system.			
Kempton Refuse and AMD, Tucker County, WV. <i>West Virginia Department of Environmental Protection.</i> Senior Engineer. Performed research of geological data and mining maps, review of water quality data, and design of acid mine drainage abatement measures, including open limestone channels, a limestone pond, a Successive Alkalinity Producing System, and an aerobic wetland. Prepared construction plans and specifications and attendance at pre-bid and preconstruction meetings for the project which included erosion and sedimentation control measures, site grading, mine seals, rock underdrains, collection and diversion ditches, backfilling a dangerous highway, soil cover placement, revegetation, and reforestation.			
Fort Gordon Mine Closure Plans, Augusta, Georgia. <i>US Army Corps of Engineers, New Orleans District.</i> Task Manager Duties included site investigation and preparation of reclamation plans including E&S controls, surface water ditches, soil cover placement, backfilling of highwalls, and revegetation as required for permanent closure of seven mining sites at Fort Gordon, Georgia. The project included review of available site water, rock, and soils data, design and preparation of construction plans, narratives, and specifications.			
Borgman Portals and Refuse, Preston County, WV. <i>West Virginia Department of Environmental Protection.</i> Senior Engineer. Duties included research of geological data and mining maps, review of water quality data, and initial design of acid mine drainage abatement measures including open limestone channels, limestone ponds, and aerobic wetlands. Final design was provided without wetlands and ponds per request of the client. Prepared construction plans and specifications and attendance at pre-bid and preconstruction meetings for the project, which included site grading, mine seals, collection and diversion ditches, soil cover placement, and revegetation.			
Powell River Ecosystem Restoration Project, Virginia. <i>U.S. Army Corps of Engineers, Nashville District.</i> Senior Engineer. Performed research of geological data and mining maps, review of water quality data, and design of acid mine drainage abatement measures, including aerobic wetlands, successive alkalinity producing systems, metals settling ponds, open limestone channels, and fly ash soil amendments. Prepared plans, specifications, and detailed cost estimates for the project, which included site grading, mine seals, collection and diversion ditches, soil cover, and revegetation.			
EDUCATION (Degree, Year, Specialization) M.S., 1997, Civil Engineering; B.E., 1987, Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS REGISTRATION (Type, Year, State) Professional Engineer, 1998, WV; Professional Engineer, 1993, PA Professional Engineer, 1998, OH; Professional Engineer, 2001, VA			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete Data but keep to essentials)			
NAME & TITLE (Last, First, Middle Init.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Dziubek, John A., P.E. Project Manager	17	15	7
Brief Explanation of Responsibilities Mr. Dziubek has performed and managed engineering and design projects for more than 30 years. The projects range from subsurface investigations; building, industrial, and heavy and highway foundations; and site closures at industrial facilities; to remedial design and remedial action at Superfund sites. He has managed public and private sector projects for the Corps of Engineers, U.S. Navy, State DOT's, and major industrial clients. Larger projects have ranged from \$1 million to \$10 million and have required civil, geotechnical, mining and environmental engineering expertise. Chalk Mountain Dump Site 4, Spruce Pine, N.C. The Feldspar Corporation. Project Manager. Duties included site investigation and preparation of plans and permit submission documents for a disposal area at an existing feldspar strip mine including slope stability analysis, grading, E&S controls, sedimentation pond enlargement, surface water ditches, soil cover placement, final reclamation plans, and revegetation. The project included review of available site rock and soils data, design and preparation of construction plans, cost estimates, narratives, and specifications. Various Reserve Analyses and Mine Planning Projects, Ohio, Pennsylvania, Virginia, Kentucky, West Virginia and North Carolina. Ohio Edison, Veon Coal, Ashland Coal, Virginia Pocahontas, Koppers Company. Project Manager. Managed reserve analysis and mine planning projects for coal mines. These projects required computer models for determining mineral reserves, stockpile inventories, mining simulation, long range planning, cost studies, mine drainage, mine subsidence, and production monitoring. Geotechnical Engineering Services, Ohio, West Virginia and Pennsylvania. U.S. Office of Surface Mining. Project Manager. Managed engineering services contract for more than 40 abandoned mine lands projects for the U.S. Office of Surface Mining. The projects required surveys, mapping, subsurface investigations, plans, specifications, and construction inspection. Mining-related problems included flood studies, mine subsidence, underground mine fires, mine drainage, vertical shaft filling, gob piles, landslides, refuse fires, grouting programs, and surface mine reclamation. Construction costs for project implementation were more than \$12 million. Various Reclamation Projects, Ohio and West Virginia. Ohio Department of Natural Resources and the West Virginia Department of Natural Resources. Projects included mine subsidence, flood studies, landslides, mine drains, mine seals, mine fires, mine stabilization and refuse bank reclamation. Construction costs were over \$5 million. Various Coal Refuse Facilities Geotechnical Design, Ohio, Pennsylvania, West Virginia, Illinois, Virginia and Kentucky. North American Coal, Bethlehem Mines, Diamond Shamrock Coal, Exxon Coal, Sierra Coal. Geotechnical Manager. Supervised the geotechnical design of coal slurry impoundments and coal refuse embankments. Upstream and downstream construction methods were used. Design analyses included slope stability, hydrology and hydraulics, and structural design of primary and emergency spillway systems. Unimin Trailings Dam Expansion, Virginia. Unimin Corporation. Project Manager. Managed design and construction phase of a phased capacity increase of a tailings dam for an industrial glass sand plant and quarry. The main embankment and dike were raised, the spillway redesigned, and the outlet pipe extended. Piezometric instrumentation was installed to monitor the phreatic surface through the main embankment.			
EDUCATION (Degree, Year, Specialization) M.S.C.E., 1966, Civil Engineering; B.S.C.E., 1964, Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Society of Civil Engineers Society of American Military Engineers			
REGISTRATION (Type, Year, State) Professional Engineer, 1969, PA; Professional Engineer, 1990, WV Professional Engineer, 1991, OH			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Dooley, Michael J. Mapping Supervisor	-	-	-
Brief Explanation of Responsibilities Mr. Dooley has successfully managed at least 500 projects in a project manager or production manager role over the past 12 years. Projects ranged from large multi-million dollar nationwide mapping in the Caribbean utilizing various subcontractors, softwares and technologies to produce planimetry/topology and orthophotography to large-scale site mapping to provide high accuracy terrain data, planimetric data and pixel resolutions required for engineering specific projects. He is well-versed through either having worked directly in or acquired specific technical knowledge of: flight planning, control planning, airborne GPS/IMU operations, aerotriangulation (automated and manual), LIDAR operations, film based and digital cameras, DTM and DEM compilation, GIS Mapping, transmission line and pipeline profiling, volumetrics for volume reporting, orthophotography and image rectification, vector based CAD editing, quality control, preparation of responses to RFP/LOI/RFQ, estimating. He has served diversified customer contacts including multiple state and county governments, quasi-governmental organizations (E911, Councils of Government), city governments, public utilities, private utilities, mining and materials, appraisal districts. Engineering companies in support of oil and gas facilities and pipelines, electrical facilities and transmission. Engineering companies in support of residential, commercial and industrial development. FAA Commercial, International and General Aviation airports. Experience Production Manager Tri-County Aerial Acquisition Project in conjunction with Frederick County, Maryland- 4 County Project - Frederick, Washington, Allegany, and Garrett Counties Utilized LIDAR data and addition of DEM breaklines, produced 6" orthoimagery files, 1"=100' planimetric data including: building footprints, edge of pavement, stream channels, forested areas, driveways, parking, medians, ponds, fences & railroad tracks and 2' contours for Allegany County Government (allconet). Project Manager Bexar Metro 911 Network District, San Antonio, Texas - 3 County Project - Bexar, Comal, and Guadalupe Counties Utilized digitally captured aerial photography, produce 6" pixel black and white orthoimagery, black and white was requested specifically by client. Generated DTM data which was yearly updated over three years. Digitized all roadway (public and private) centerline data, with yearly updates. Project Manager Dominican Republic, Countrywide mapping - "Irrigated Areas Mapping project - Irrigation Systems Management Studies" Flew entire country, provided 12,000 frames of imagery in both digital and hard copy form to The National Government". Produced 0.5m pixel CIR and color imagery for specific irrigated areas. Produced 1m contours from DTM acquired data, 1"=200' planimetric data.			
EDUCATION (Degree, Year, Specialization) Suffolk County Community College - Civil Technology 1983 - 1987		REGISTRATION (Type, Year, State)	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Init.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF EXPERIENCE	
		YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Henry, James R., P.E. Senior Engineer	-	9	-
Brief Explanation of Responsibilities Mr. Henry is a Geotechnical Engineer responsible for the development of subsurface explorations, preparation of geotechnical analyses, submission of design reports, and participation in proposal development. He has more than ten years of engineering experience in geotechnical investigations and construction consultation for a wide range of transportation, building, energy and dam projects. Slope Stability Analysis, Pittsburgh, Pennsylvania. Pennsylvania Department of Transportation. Assistant Engineer. Conducted slope stability analysis and developed recommendations for embankments on a proposed limited access highway to Pittsburgh International Airport. Landslide Remediation Design, Wheeling, West Virginia. U.S. Army Corps of Engineers, Baltimore District. Engineer. Participated in a landslide remediation design and construction project for an Army Reserve Center. Rock Slope Remediation, Pittsburgh, Pennsylvania. Port Authority of Allegheny County. Engineer. Participated in rock slope investigations and in the development of slope remediation plans for the Airport Busway. Landslide Slope Stability Analysis, Armstrong County, Pennsylvania. Buckeye Pipeline Company. Assistant Engineer. Conducted slope stability analysis for landslide remediation. Rock Slope Investigation, Bedford, Pennsylvania. Pennsylvania Turnpike Commission. Engineer. Participated in a rock slope analysis and in the development of slope remediation plans and specifications. Detention Pond Investigations, Mars, Pennsylvania. The Trees Development Corporation. Assistant Engineer. Performed subsurface investigations and slope stability analyses of 10 detention pond embankments for a residential development. Detention Pond Stability Analysis, Morgantown, West Virginia. Allegheny Power Service Corporation. Assistant Engineer. Analyzed stability of several detention ponds for an ash disposal site. Roadway Embankment Analysis, Chippewa to New Castle, Pennsylvania. Pennsylvania Turnpike Commission. Assistant Engineer. Analyzed several roadway embankments for the Beaver Valley Expressway that runs from Chippewa to New Castle. Soil Reports and Construction Specifications, Pittsburgh, Pennsylvania. Pennsylvania Department of Transportation. Assistant Engineer. Prepared soil reports and construction specifications for Southern Expressway at Pittsburgh International Airport.			
EDUCATION (Degree, Year, Specialization) M.S., 1998, Civil Engineering; B.S.E., 1988, Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS N/A			
REGISTRATION (Type, Year, State) Professional Engineer, 1993, PA; Professional Engineer, 1993, MD			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Init.)	YEARS OF EXPERIENCE	
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:
Zang, Scott D., P.E. Senior Engineer	15	15

YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: -

Brief Explanation of Responsibilities

Mr. Zang is a geotechnical engineer experienced in site investigation and design. His professional experience encompasses reconnaissance, field testing, laboratory testing, project analysis and design, report preparation and construction inspection for roadways, railroads, earth dams, buildings, hazardous waste studies, industrial facilities, airports and coal mines. His design experience also includes abandoned mine land reclamation and innovative AMD abatement design.

Raw Water Pump Station & Transmission Main, Wellsville, Ohio. Southern Columbiana County Regional Water District. Assistant Technical Manager. Performed the geotechnical investigation and made design recommendations for construction of a 30 foot deep dry well receiving water from a new intake system placed in the Ohio River. The design included evaluation of buoyancy effects, temporary shoring for the dry well and the intake piping, and remediation of a soft clay layer that would be encountered at the base of the excavation for the dry well.

Coal Refuse Pile Remediation Design Analysis and Plans, West Virginia. West Virginia Department of Environmental Protection. Engineer. Performed design analysis and prepared construction plans, specifications and cost estimates for remediation of several abandoned coal refuse piles. Projects included regraded slope stability analysis, retention structure design, subsurface water control and facilities design for surface water control of burning and non-burning refuse piles.

Coal Mine Subsidence Remediation Construction Plans, West Virginia. West Virginia Department of Environmental Protection. Engineer. Prepared construction plans, specifications and cost estimates for remediation of areas affected by subsidence of abandoned underground coal mines.

Private Residence Subsidence Evaluations, Western Pennsylvania. U.S. Department of the Interior, Office of Surface Mining. Assistant Engineer. Performed subsurface investigations to evaluate subsidence and subsidence-related incidents at several private residences. Project included surface distress cause determination and recommendation of remedial measures.

Manor Mine and Preparation Plant, Greene County, Pennsylvania. Consolidation Coal Company. Assistant Engineer. Conducted field testing program for foundations of several support buildings, a preparation plant, and coal storage silos.

Landini Mine Fire Remediation, Elizabeth, Pennsylvania. U.S. Department of the Interior, Office of Surface Mining. Assistant Engineer. Performed subsurface investigations and designed remedial measures to control a fire in an abandoned underground coal mine.

Acid Mine Drainage Abatement Project, Barton, Ohio. Ohio Department of Natural Resources. Engineer. Conducted water sampling program and field investigation during development of acid mine drainage abatement procedures at an abandoned underground coal mine and coal refuse area. Handled administration and office engineering during implementation of remedial measures.

Groundwater Monitoring Well Construction and Sampling, Pennsylvania and West Virginia. Various Clients. Assistant Engineer. Assisted with sampling and constructing groundwater monitoring wells at various locations.

EDUCATION (Degree, Year, Specialization)
BS, 1980, Geological Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
American Society of Civil Engineers

REGISTRATION (Type, Year, State)
Professional Engineer, 1985, PA

NAME & TITLE (Last, First, Middle Init.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Ciucci, Ronald J., P.E. Senior Engineer	-	8	19
Brief Explanation of Responsibilities			
Mr. Ciucci is a senior engineer in water and sanitary sewer systems, site development, hydrology and hydraulics, stormwater management, erosion and sedimentation control, and general municipal engineering. He also performed hydraulic/hydrologic analysis for several AML and AMD remediation projects.			
Fox Chapel Pump Station and Rising Main, City of Pittsburgh, Pennsylvania. Pittsburgh Water and Sewer Authority. Project Engineer. Prepared pump and system curve data and supporting calculations.			
Pittsburgh Water and Sewer Authority Pilot Plant, City of Pittsburgh, Pennsylvania. Pittsburgh Water and Sewer Authority. Project Engineer. Performed pump design/selection and prepared technical specifications.			
Campus-wide Water Distribution System Evaluation, University Park, Pennsylvania. The Pennsylvania State University. Senior Engineer. Responsible for review of exiting information relating to the campus water distribution system, verification, calibration and analysis of the University's 1,000 pipe hydraulic model.			
Potable Water Distribution System Evaluation, Weirton, West Virginia. Weirton Steel Corporation. Senior Engineer. Supervised modeling of the Weirton plant's water distribution system. The project included a comprehensive review of industrial water usage, existing plant mapping, model construction, model calibration via field testing, model simulations, alternate/upgrade analysis and final recommendations.			
Hydraulic Model Calibration and System-wide Fire Flow Analysis, North Sewickley Township, Pennsylvania. The Municipal Authority of North Sewickley Township. Senior Engineer. Supervised model calibration and preparation of a Township-wide fire flow analysis. Baker performed a comprehensive hydrant testing program that included over twenty test locations. The project included recommendations to the Authority to bring their hydrants into compliance with AWWA standards.			
Hydraulic Model and Maintenance, Various Locations throughout Beaver County, Pennsylvania. Borough of Baden, Center Township Water Authority, North and New Sewickley Townships, Beaver Falls Municipal Authority. Senior Engineer. Maintain and calibrate existing hydraulic model, some of which over 10,000 pipes in size.			
ALCOSAN Service Area Wide Flow Monitoring Program. Allegheny County Sanitary Authority. Task Manager. Served as field coordinator and data processor for a flow monitoring program that measured sewage flow from 83 contributing municipalities. Major watersheds include Saw Mill Run; Turtle Creek; Chartiers Creek; Thompson Run; Beck's Run; Streets Run; Lowners Run; Jack's Run; Girty's Run; and Pine Creek. The goal of the program was to quantify sewage flow from ALCOSAN communities and reduce wet weather flows to the treatment plant.			
ALCOSAN Deep Tunneling Flow Monitoring. Allegheny County Sanitary Authority. Task Manager. Responsible for site selection and equipment selection for monitoring of the Alcosan tunnel sewers which vary in depth from 40 to 120 feet deep. Monitoring equipment was installed in nine locations along the deep tunnel systems to measure level and flow within the system. This data was used to study storage capacity of the tunnels which is a requirement of the Nine Minimum Controls of CSOs.			
EDUCATION (Degree, Year, Specialization) B.S., 1992, Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Society of Civil Engineers Society of American Military Engineers			
REGISTRATION (Type, Year, State) Professional Engineer, 1998, Virginia Professional Engineer, 1998, Maryland Professional Engineer, 1997, West Virginia Professional Engineer, 1997, Ohio Professional Engineer, 1997, Pennsylvania			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Init.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Culler, James A., P.E., P.L.S. Engineering Manager	5	6	36
Brief Explanation of Responsibilities Mr. Culler is a civil and environmental engineer with more than 25 years of experience in project planning, design, construction, operation and maintenance engineering services. His background includes municipal engineering representation, site engineering for industrial and commercial parks; municipal infrastructure design (roads, storm drainage, water and sewer); industrial and recreational facilities; wastewater and water planning and feasibility studies; and municipal and sanitary engineering designs (water and wastewater treatment, pumping, water storage and distribution, and wastewater collection and conveyance). He is also experienced in preparation of construction drawings and contract specifications; construction cost estimating; preparation of regulatory applications and supporting data; financial planning studies; user rate studies; and construction inspection services. Water System Design Engineering, Aliquippa, Midland and Beaver Falls, Pennsylvania. Various Pennsylvania Municipalities. Project Engineer and Project Manager. Provided design engineering and construction services for water system extension projects. Water Storage Tank Design Engineering, Beaver Falls, Aliquippa and Midland, Pennsylvania. Various Pennsylvania Municipalities. Project Engineer and Project Manager. Provided design engineering and construction services for new construction of finished water storage tanks. Water System Hydraulic Analysis and Modeling, Beaver Falls, New Sewickley, Meadville, Baden and Koppel, Pennsylvania. Various Pennsylvania Municipalities. Technical Review Manager. Performed hydraulic analysis and modeling of various water distribution systems. Spring Alley and Mercer Road Water Pumping Stations, New Brighton Borough and Daugherty Township, Pennsylvania. Beaver Falls Municipal Authority. Project Manager. Performed design engineering evaluations, permitting and preparation of equipment purchasing bidding documents for the two (2) water pumping stations. Spring Alley Station consists of two 455 gallons per minute at 305 feet TDH pumps upgradable to 575 gallons per minute at 330 feet TDH. Mercer Road Station consists of three pumps with two at 300 gallons per minute at 128 feet TDH and one at 400 gallons per minute at 147 feet TDH upgradable to two at 350 gallons per minute at 135 feet TDH and one at 500 gallons per minute at 165 feet TDH. Water Treatment Plant Design, Berwind, West Virginia. West Virginia Division of Environmental Protection. Technical Review Manager. Performed technical reviews for preparation of construction documents for 300 gallons per minute potable ground water treatment facility. Treatment scheme included well pumping, air stripping tower, pre and postchlorination, sedimentation, filtration and sludge dewatering lagoons.			
EDUCATION (Degree, Year, Specialization) M.S., Civil and Sanitary Engineering, 1973; B.S., Civil Engineering, 1971			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Society of Civil Engineers American Water Works Association Chi Epsilon Civil Engineering Honorary Fraternity Pennsylvania Water Environment Association Water Environment Federation			
REGISTRATION (Type, Year, State) Professional Engineer, PA, 1976 Professional Engineer, WV, 1976 Professional Land Surveyor, PA, 1981			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	
Stewart, Michele, P.E. Engineering Manager	12	14	--
Brief Explanation of Responsibilities Ms. Stewart is a Project Manager at Baker. Her specific project responsibilities have included project planning management, subcontract administration and coordination, engineering analysis, design, report preparation, and supervision/inspection of geotechnical construction activities. Ms. Stewart has also gained a significant amount of experience in the area of abandoned mine land reclamation and other mining related projects. Experience relevant to this project includes: No. 8 Mine, Mine Drainage Evaluation, McDowell County, West Virginia. U.S. Steel Mining. Project Manager and Principal Investigator. Project involving the evaluation of treatment requirements and possible treatment alternatives for drainage emanating from an abandoned mine. Both direct and passive treatment alternatives were evaluated. Study results and recommendations, including conceptual designs, were summarized in a project report. Numerous Abandoned Mine Land Projects, West Virginia and Pennsylvania. Office of Surface Mining and West Virginia Department of Natural Resources. Project Engineer. The types of problems encountered included mine subsidence damage, uncontrolled mine drainage, a mine fire and mining-related landslides. The scope of work for each project included investigation, engineering analysis, abatement design, and development of the construction contract documents (plans, specifications and engineer's cost estimate). Responsible for all phases of the project. Shaft and Portal Site Design and Permitting Project, Waynesburg, Pennsylvania. Cyprus Cumberland Mine No. 6 Shaft. Project Manager. Provided engineering services needed for development of the site grading, surface water management, erosion/sedimentation control and ultimate site reclamation. The site work for this project included: a 1.6 mile access road over hilly terrain; a 1,000 foot long stream enclosure; a seven acre shaft and portal site; and a sedimentation pond and other erosion and sedimentation control structures. Responsibilities surrounding this project included planning/directing design and preparation of the project deliverables, client coordination and assisting the client with regulatory agency reviews. Bleeder Shaft Site Design and Permitting Project, Waynesburg, Pennsylvania. Cyprus Cumberland Resources Corporation No. 2 Bleeder Shaft. Project Manager. Provided engineering services needed for development of the site grading plan, surface water management, erosion/sedimentation control plan, and ultimate site reclamation. Mine drainage is to be pumped from the No. 2 Bleeder Shaft site, therefore, the design for this facility included lined treatment ponds. Responsibilities surrounding this project included planning/directing design and preparation of facility construction documents and permit documents, client coordination, and assisting the client with regulatory agency reviews. Shaft and Portal Site Design and Permitting Project, Waynesburg, Pennsylvania. Cyprus Emerald Resources Corporation No. 7 and No. 8 Shafts. Project Manager. Providing engineering services needed for development of the site grading plan, surface water management, erosion/sedimentation control plan, and ultimate site reclamation. Both site designs to provide for a bathhouse/portal facility, 300car parking area, and separate rock dust borehole site. Also, both sites have been designed to be developed in two phases. Mine drainage is to be pumped from the No. 8 Shaft site, therefore, the design for this facility includes a lined treatment pond. The No. 8 Shaft facility also includes wetland encroachments. Responsibilities surrounding these two shaft projects include planning/directing design and preparation of facility construction documents and permit documents, client coordination, assisting the client with regulatory agency reviews, and participating in township planning and zoning hearing board meetings to obtain a zoning variance.			
EDUCATION (Degree, Year, Specialization) BS, 1975, Civil Engineering MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Society of Civil Engineers REGISTRATION (Type, Year, State) Professional Engineer, 1980, PA			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Martin, Mark R., PG Assistant Geologist I	11	9	-

Brief Explanation of Responsibilities

Mr. Martin is a geologist with experience in conducting and reporting results of geotechnical investigations including geologic research, site reconnaissance, preparing test drilling contracts, test boring inspection, and geotechnical laboratory testing.

North Fork of Yellow Creek AMD Abatement, Jefferson County, Ohio. *Nashville District, U.S. Army Corps of Engineers.* Project Geologist. Duties included: Coordinating with the drilling firm; locating borings; inspecting test borings, including logging soil from auger cuttings and standard penetration tests and logging rock core from NX or NQ coring to determine coal refuse thickness, overburden thickness over mine portals and delineating mine voids; installing standpipe piezometers in mine voids to monitor water levels; performing field permeability tests in boreholes; selecting samples for laboratory testing, including classifications, nutrient analysis, compaction testing, and permeability testing; preparing typed boring logs from field originals using LogDraft program; coordinating with the Project Manager during field activities.

Mine Drainage Subsurface Investigation, Clarksburg and Fairmont, West Virginia. *West Virginia Department of Energy.* Project Geologist. Conducted site reconnaissance, monitored test borings to identify mine voids and installed standpipe piezometers to evaluate presence of mine pools for mine drainage investigation.

Mine Subsidence Subsurface Investigation, MacArthur, West Virginia. *West Virginia Department of Environmental Protection.* Project Geologist. Logged soil and rock core to identify mine voids and produced final test boring records to produce mine stabilization program.

Abandoned Mine Lands Project, Cheat Lake, West Virginia. *West Virginia Department of Environmental Protection.* Project Geologist. Oversaw test drilling activities to determine amount and location of coal mine spoil/refuse, collected acid mine drainage samples for testing, installed piezometers and produced final test boring records.

Abandoned Mine Lands Project, Masontown, West Virginia. *West Virginia Department of Environmental Protection.* Project Geologist. Conducted a site reconnaissance at four areas within the project location. Oversaw test drilling activities (i.e., logging soil and rock core) to determine amount/extent of coal mine spoil/refuse within the four designated areas, collected water samples from acid mine drainage locations, and produced final test boring records.

Abandoned Mine Lands Project, Ely and Puckett Creeks, Virginia. *Virginia Department of Mines, Minerals and Energy.* Project Geologist. Conducted a site reconnaissance for four sites in southwestern Virginia. Oversaw test drilling activities including logging soil and rock core, conducted bore hole permeability tests, and conducted a survey of local residence for a Hazardous, Toxic, and Radiological Waste Investigation Report.

Waterline Feasibility/Extension Project, Berwind, West Virginia. *West Virginia Department of Environmental Protection.* Project Geologist. Conducted a site reconnaissance, logged soil and rock core along the proposed alignment, collected water samples, and produced final testing boring records.

EDUCATION (Degree, Year, Specialization)
B.S., 1988, Geology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)
Professional Geologist, 1995, PA

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Init.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Heilman, Gregory A., P.E. Senior Engineer	6	9	-
Brief Explanation of Responsibilities Mr. Heilman is a civil engineer with extensive professional experience including hydrologic and hydraulic analysis, environmental permitting and engineering, solid and hazardous waste management, and construction services. Project engineer for the remedial design of the Buckeye Reclamation Landfill Superfund Site, located in Belmont County, Ohio. Responsible for overall site design including developing final grading plans; details; construction sequencing and schedule; and construction cost estimate. Responsible for designing the erosion and sediment control plan and the surface water management plan, which included relocating and lining 5,000 feet of an existing stream. Assisted in the preparation of the final report, technical specifications, Operation and Maintenance Plan, and Construction Quality Assurance (CQA) Plan. Project engineer for the preparation of a solid waste permit application for a 120-acre restricted waste landfill for U.S. Steel Gary Works, Indiana. Primary responsibilities included coordination of site design, preparation of construction drawings, and preparation of a detailed construction cost estimate. Site design work involved development of grading plans, surface water management, leachate collection system, construction details and sequencing, liner and cover installation. Project engineer for the development of several closure and post-closure plans for HWT-2 Neutralized Waste Acid Lagoons for U.S. Steel Gary Works, Indiana. Responsible for all aspects of the permit applications including developing closure concepts; site grading; drainage and erosion control; sludge stabilization; cap and cover design; preparation of drawings and technical specifications; a construction quality assurance plan; and cost estimates. The most recent alternative included groundwater extraction and the design of slurry walls. Assisted in a feasibility study to evaluate dry disposal alternatives for flue gas desulfurization sludge and fly ash for Pennsylvania Power Company Bruce Mansfield Power Station. The project included comparing the alternatives for preliminary costs, technical feasibility and performance to meet all applicable regulations. Involved extensively in sludge dewatering options, the addition of dry additives, dry disposal operations, cost evaluation and screening and comparing of alternatives. Site engineer for a waste removal/site remediation project in Carnegie, Pennsylvania. Managed removal operations for contaminated soil, conducted soil sampling, wrote inspection reports, inspected site backfill, and provided overall supervision of site activities. Performed engineering design for the closure of an existing sludge bed at a hazardous waste surface impoundment for Armco Advanced Materials Company, Butler Works, Pennsylvania. Design included site grading, sludge settlement investigations, impermeable cover design, and storm water control facilities design. Project engineer for the preparation of a permit application for the closure of a solid waste disposal facility for LTV Steel Hennepin Works, Hennepin, Illinois. Responsible for the development of the closure and post-closure plans including site grading; final cover design; drainage and erosion control; cost estimates; construction quality assurance plan; technical specifications and design drawings. Responsible for developing conceptual designs and cost estimates for various alternatives for the removal and disposal of 21,000 cubic yards of sludge for the closure of an existing sludge lagoon.			
EDUCATION (Degree, Year, Specialization) B.S., 1988, Civil and Environmental Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS			
REGISTRATION (Type, Year, State) Professional Engineer, 2007, WV; Professional Engineer, 1992, PA; Professional Engineer, 1998, OH;			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF EXPERIENCE	
		YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
David K. Saylor, P.E. Geotechnical Project Manager	14	25	5
Brief Explanation of Responsibilities Southern Expressway Construction, Pittsburgh International Airport: Onsite professional engineer for excavation and disposal of municipal wastes within the right-of-way of a major highway construction project. Excavated wastes were disposed in a permitted onsite landfill while contaminated industrial wastes were disposed offsite in a non-RCRA disposal facility. Drums encountered during excavation were overpacked and delivered to an offsite RCRA incinerator and disposal facility. Approximately 465,000 cubic yards of solid waste and 280,000 cubic yards of unclassified soils were excavated. EPA Superfund Site, Summit Ohio: Investigator for field investigation, drilling, sampling, and well installation for an abandoned hazardous waste incinerator site listed as a priority EPA Superfund site. Fieldwork was performed to support RIFS work. Abandoned Mine Land Reclamation Program, West Virginia: Engineer for abandoned mined land projects in West Virginia. The majority of these projects involved the reclamation of abandoned, unstable coal refuse embankments. Prepared investigation programs to evaluate engineering and vegetation properties of materials, analyzed data to develop stable final configurations, and prepared contract documents, including drawings, specifications and cost estimates. Supervised the monitoring of construction for these projects. Office of Surface Mining Contractor: Performed investigations and designed mitigation methods for numerous structures damaged by deep mine subsidence in the Tri-State area as a contractor of Office of Surface Mining. General Geotechnical Projects: Performed and directed numerous geotechnical foundation investigations to develop recommendations for the design of foundation systems for both individual commercial office buildings and major mall developments. Scoped and implemented investigation programs, logged materials encountered, prepared geologic sections, and developed laboratory testing programs. Analyzed results of investigation to develop opinions and on most appropriate foundation systems and parameters for system design. General Coal Refuse Design Projects: Designed coal refuse slurry impoundments and refuse piles in West Virginia, Virginia, and Kentucky. Monitored investigation programs, including the drilling of borings and performance of in-place bedrock permeability packer testing. Services provided include stormwater runoff calculations, flood routing, embankment stability, permit application preparation, design drawings, and report development. Grove City Factory Shops, Grove City Pennsylvania: Engineer of record for the design of a water supply, storage, treatment, and distribution system for a major retail center in Pennsylvania. The water distribution system was approximately 2.5 miles long and supplied water to residences and businesses along the route. The source of water was a new community groundwater well. Grove City Factory Shops, Grove City Pennsylvania: Engineer of record for the design of an approximate 5 mile long sanitary sewer system to provide sewer for a major retail center in western Pennsylvania. The system was designed as a gravity flow system and required two pump stations to overcome hilly terrain. The system was designed as a gravity system to permit residences along the route to tap in and eliminate their on lot systems. AEG Building, Southpointe Business Park, Canonsburg, Pennsylvania: Developed investigation plan and designed and implemented repair for a landslide at a major industrial facility in Southwestern Pennsylvania. The toe of the embankment was immediately adjacent to a public roadway and public utilities. Allegheny Power Company, Hatfield Power Station, Greene County, Pennsylvania: Project manager for the redesign, repermitting, and construction of an approximate 30-acre dry coal combustion byproduct disposal area designed in accordance with revised Pennsylvania Residual Waste Regulations. Mr. Saylor served as Engineer-of-Record for both the design and construction of the facility.			
EDUCATION (Degree, Year, Specialization) B.S., 1981, Civil Engineering; A.S., 1975, Business Administration		REGISTRATION (Type, Year, State) Professional Engineer, PA, 1988; Professional Engineer, OH, 1995	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Society of Civil Engineers			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	
Schroeder, Kevin S. Environmental Scientist	-	8	-
Brief Explanation of Responsibilities As a Senior Environmental Scientist, Mr. Schroeder's responsibilities include leading and documenting field studies for various environmental reports as required under the National Environmental Policy Act, Section 404 of the Clean Water Act and FHWA requirements, in addition to local and state regulatory requirements. As an experienced wetland ecologist, Mr. Schroeder applies his aquatic biology background in wetland and stream studies. Mr. Schroeder is proficient in wetland identification, delineation, functional assessment, monitoring, permitting and remote sensing. He is emerging in the creation and restoration arena for both wetlands and streams. Mr. Schroeder has already applied Level I Rosgen Training - Applied Fluvial Geomorphology in Western Pennsylvania. Proposed Mining Air Shaft and Access Road, Greene County, Pennsylvania. <i>Cyprus Cumberland Resources Corporation.</i> Task Leader. Performed wetland delineations and water quality analysis of the project area streams utilizing the EPA's Rapid Bio-assessment Protocols. Submitted necessary permits including state and federal wetland encroachment permits. Author of stream and wetland sections of the Bureau of Deep Mine Safety's Module 14. Coal Conveyor Belt Right-of-Way, Beckley, West Virginia Area. <i>Norfolk Southern.</i> Environmental Specialist. While with another firm, performed wetland delineations and stream surveys for a five-mile coal conveyor belt right-of-way near Beckley, West Virginia, proposed by Norfolk Southern. Advised client on tower placement to minimize wetland impacts and high quality stream encroachments. Wetland Mitigation Sites, Raccoon Creek Marsh and Taxiway E, Allegheny County, Pennsylvania. <i>Allegheny Department of Aviation.</i> Environmental Scientist. Monitored wetland mitigation sites as required by the PADER to evaluate the success of the replacement wetlands. Included with the Wetland Monitoring Report and WET functions and values analysis, and aquatic and wildlife species observation list. Suggested corrective action items for existing and potential problems regarding the success of the mitigation wetlands. Natural Gas Pipeline Projects, Various Sites: Ohio, Pennsylvania, New York, Virginia and West Virginia. <i>Columbia Gas Transmission Corporation.</i> Environmental Specialist. While with another firm, performed wetland determinations for several natural gas pipeline projects. Filed FERC reports and applied for and was granted multiple Nationwide Permits - 12, 14, and 26, as well as state wetland and stream encroachment permits, hydrostatic test water discharge permits and land disturbance permits. Surface and Groundwater Sampling, Shippingport, Pennsylvania. <i>Pennsylvania Power Company.</i> Environmental Specialist. While with another firm, assisted in collecting various surface and groundwater samples at the Bruce Mansfield Power Station. Field sampling included basic water quality measurements and laboratory preparation of samples. Surface Water Sampling, West Elizabeth Pennsylvania. <i>Hercules Incorporated.</i> Environmental Specialist. While with another firm, collected surface water samples at various locations within the Hercules chemical plant as required by the NPDES Permit. Sampling included basic water quality measurements and laboratory preparation of samples.			
EDUCATION (Degree, Year, Specialization) B.S., 1986, Environmental Conservation			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Society of Wetland Scientists		REGISTRATION (Type, Year, State)	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	
Smithson, Jason, T., P.S. Project Manager/Senior Eng. Technician	11	8	2

Brief Explanation of Responsibilities

Since joining the company in 2006, Mr. Smithson has been assigned to the Civil Services Department and is currently a Project Manager. During his career, Mr. Smithson has performed geotechnical analysis, civil design, and environmental assignments and functioned as a survey party chief.

WVDEP14176, Kanawha County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at four sites (Marmet (Wells Drive), Cabin Creek (Stapler), East Bank (Garten), and the Mill Hollow Complex) in eastern Kanawha County.

WVDEP14387, Crooked Run #5, Harrison County. As a Senior Engineering Technician, performed research of geological data and mine maps, collected and reviewed water quality data, coordinated drilling activities, and assisted in the design of open limestone channels. Assisted in the development of construction plans and specifications for the project. The Crooked Run #5 project is comprised of six (6) work sites. These sites included numerous abandoned (draining) mine portals, refuse areas, a bench pond, trash dump areas and miscellaneous mine debris and subsidence areas.

Abandoned Mine Lands, Statewide Contract, Various Locations, West Virginia. As a Project Surveyor, Mr. Smithson provided services for topographic mapping for various Abandoned Mine Land (AML) projects throughout West Virginia. During these projects he provided topographic mapping and coordinated aerial photogrammetry. This data was incorporated in the design of landslide correction, retaining wall design, site grading, drainage improvements, acid mine drainage collection and neutralization, water line upgrade and extensions. Work on these projects also included: establishing horizontal and vertical control surveys for aerial photogrammetry mapping, baseline layout, referencing control points, generating check cross sections and site surveys including all physical and topographic features of each unique site.

West Virginia Department of Environmental Protection, Photogrammetric Control Surveys, Various Locations, West Virginia. Work performed by Mr. Smithson on these projects included establishing horizontal and vertical control surveys for aerial photogrammetry mapping, baseline layout, and referencing control points. This work was performed utilizing GPS and conventional survey methods.

Mine Safety and Health Administration - Martin County Coal, Slurry Impoundment Failure Investigation, Martin County, Kentucky. As a Project Geologist, Mr. Smithson's duties included the coordination of drilling activities with multiple drilling crews supported by a team of engineers and geologists. He supervised and participated in the subsurface investigation logging activities, the creation of bedrock contour maps, report preparation, and analytical testing on samples extracted from the drilling efforts.

CSX Hotels, Inc., d.b.a. The Greenbrier, White Sulphur Springs, West Virginia. As an Environmental/Geotechnical Geologist, Mr. Smithson was responsible for subsurface investigation activities, in an alluvium/karst aquifer type to determine overburden and bedrock descriptions and groundwater flow analysis, along with the supervision of multiple environmental delineation crews. As a Geologist, assisted the Licensed Remediation Specialist in performing site characterization investigations at the four parcels entered into the West Virginia Voluntary Remediation Program. Work tasks included performing Geoprobe® direct-push investigations, groundwater sampling, landfill gas monitoring, and surface water and sediment sampling.

USACE West Virginia Ordnance Works, Point Pleasant, WV. Performed as the technical manager for the former West Virginia Ordnance Works (WVOW) NPL Site located in Point Pleasant, WV consisting of over 8,000 acres. This site has two groundwater pump and treat systems that require weekly maintenance along with over 200 monitoring and extraction wells. Associated responsibilities included; preparing scopes of work and budgets, selecting consultants/contractors, overseeing consultants/contractors work, meeting with Region 3 EPA, WVDEP, and WVDNR and distributing work to others within the district when necessary.

USACE Section 202 Program, Various Sites in WV, VA, & KY. As a geologist in the HTRW section for the Huntington District, performed multiple environmental site assessments for the Section 202 Flood Prevention Programs in West Virginia, Virginia, and Kentucky. One notable project for Dickenson County Schools in Virginia was selected as project of the year for the Huntington District for FY2012.

USACE Solutia, Nitro, WV. As a Geologist with the HTRW section for the Huntington District, represented and coordinated directly with the EPA Region 3 Project Manager. Responsibilities included overseeing all aspects of the construction of 3 bentonite slurry walls to help resolve contamination issues at the site.

EDUCATION (Degree, Year, Specialization)

B.S., 1989, Geology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)
Licensed Professional Surveyor, 2007, WV
OSHA 40-Hour HAZWOPER Certification, 1999, WV

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Init.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	
Crowder, Joseph, L., P.S. Senior Surveyor	10	17	5
Brief Explanation of Responsibilities Since joining Baker, Mr. Crowder has been responsible for performing various duties including field surveying for the reclamation of abandoned mine lands and natural stream design, mine permitting, water feasibility studies, and municipal services. He currently oversees all field surveying activities for the Charleston office. WVDEP14387, Harrison County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at six (6) sites at the Crooked Run #5 Complex in Harrison County near Clarksburg. WVDEP14176, Kanawha County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at four sites (Marmet (Wells Drive), Cabin Creek (Stapler), East Bank (Garten), and the Mill Hollow Complex) in eastern Kanawha County. Water Well Sampling, DuPont, near Washington Works Plant, Wood County, WV. Assisted in gathering data from residents, locating potential sample points, such as old drilled water wells, cisterns, and springs. Assisted in actual water sampling using various methods - bailers, air pumps, etc. Winfield ACF Site, ACF/J.U.S. Army Corps of Engineers, Winfield, WV. Work included Boundary, Topographic, Construction Layout, and Sample Point Layout of 15 acres along the Kanawha River. This project had over 12,000 sample points laid out on a 3' grid. Poor Charlie, Riverside Site, Glasgow, WV; Poor Charlie, Sattes Site, Nitro, WV; Poor Charlie, Cramer Metals Site, Parkersburg, WV. Work included Boundary, Topographic, Location and Boring Stakeout of various VERA sites and adjoining properties. Elkem Metals Disposal Facility, Elkem Metals, Alloy, WV. Work included Control Network, Boundary, Topographic Surveys, and yearly volume reports. Solutia, Nitro, WV. Work included Boundary, Topographic and Location Surveys for various projects, disposal facility caps, charcoal filtering systems, and monitoring well control network throughout the site and adjoining properties. Landfill Surveys, Various Locations, West Virginia. Work included Control Network, Boundary and Topographic Surveys for expansion of cells and yearly volume reports, Construction Layout and baseline stakeout for landfill closure. Locations included: Nicholas County Landfill, Summersville, WV Pocahontas County Landfill, Pocahontas County, WV Fleming Landfill, WV/DEP, Sissonville, WV Cunard Landfill, WV/DEP, Fayetteville, WV Mingo County Landfill, Mingo County, WV Mercer County Landfill, Mercer County, WV Cogentrix Energy, Cogentrix, Marshall County, WV. Work included GPS control survey of project area, boundary survey of 292 acres, topographic survey of 177 acres for site construction, courthouse research. Survey Supervisor. Big Sandy Peaker Plant, Constellation Power, Cabell County, WV. Work included GPS control survey of project area, boundary and topographic of 42 acres, boundary and route survey for 1 mile of transmission lines, construction stakeout. Crew Chief/Survey Supervisor.			
EDUCATION (Degree, Year, Specialization) A.S., 1989, Computer Aided Drafting			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) Professional Surveyor, 2000, WV	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
McCrady, Charles, E.I.T. Mining Engineer	5	5	4

Brief Explanation of Responsibilities

Mr. McCrady is an Engineer-In-Training and Task Manager at Baker with a background in geotechnical and mining engineering. His experience includes subsurface investigations, foundation design, mine permitting, hydrogeology, coal refuse disposal alternatives analysis, water line feasibility studies, reclamation of abandoned mine lands, including , earthwork, channel design, subsidence investigations and reclamation of coal refuse piles. He also has an extensive knowledge of both the Clean Water Act and NEPA and is responsible for these components of coal mine permitting and compliance at Baker.

WVDEP, Various Counties. Phase I Water Supply Feasibility. Conducted a feasibility study which included: on-site interviews with residents, local agencies, and government officials, research using public and private sources, and collecting water samples within project area to determine impacts past mining activities imposed on private water supplies. Provided alternatives and recommendations to identify the most cost-effective remedial measures that could be made.

WVDEP14387, Harrison County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at six (6) sites at the Crooked Run #5 Complex in Harrison County near Clarksburg.

WVDEP14800, Marion County. Drilling program development and the preparation of construction plans and specifications for the abatement of mine subsidence at four (4) sites in or near the City of Fairmont. The project "Fairmont Five Subsidence," included grout injection as well as surface depression regarding and minor drainage improvements.

WVDEP, Miller Mountain Waterline Feasibility Study. Performed research of geological data and mining maps, evaluated impacts of past mining activities on groundwater within the study area, and evaluated existing water distribution systems. Project included performing field research and sampling of surface and groundwater, plotting laboratory test results on Piper Trilinear Diagrams, identifying possible solutions to water quality problems, and providing preliminary construction cost estimates for recommended alternatives. The Miller Mountain Waterline Feasibility Study included detailed research of the local hydrology, hydrogeology, geology, and past mining activities, as well as collection and analysis of representative water samples and interviewing residents. Conclusions regarding the impact of that past mining activities have had upon local hydrogeology conditions as well as on water quality and quantity were formulated based upon information collected as part of the investigation. Finally, the report presented recommendations regarding remedial actions including extension of the Miller Mountain water distribution system and upgrades to the existing treatment facility.

WVDEP, Preston County. 9 County Roads Feasibility Study. Performed research of geological data and mining maps, evaluated impacts of past mining activities on groundwater within the study area, and evaluated existing water distribution systems. Baker was selected to provide the engineering services necessary to develop a water supply study for the specified area. The object of the study was to investigate the area's current water supply, make a determination as to how it has been affected by past mining, and recommend alternatives for water supply replacement. Baker compiled information and documentation to support an AML & R grant request to OSM for funding to extend and/or install water systems in impacted areas. The work was performed in 2 phases. The purpose of Phase 1 was to determine the potential impact of past mining activities on water supplies within the study area. When a potential impact was established, Phase 2 began, which involved a detailed investigation of mining history, geology, hydrogeology, and water supply sources.

Foundation Mining, L.P., Design/Permitting for Shaft and Slope Site, Surface Facilities, Batch Weight System and RR Spur and Siding. Assisted in preparation of permit for Foundation Mine Surface Facilities. Prepared PA DEP permit applications for the slope, shaft, railroad, and surface facilities. Assisted in design of all sites, provided E&S design for all sites, constructed pre- and post-hydrologic and hydraulic models on streams to analyze potential flooding, conducted resident interviews, and collected ground and surface water samples. Responsible for E&S design and floodplain analysis using HEC-RAS.

EDUCATION (Degree, Year, Specialization)
B.S., 1986, Environmental Conservation

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
American Society of Civil Engineers

REGISTRATION (Type, Year, State)
Engineer-In-Training, 2006, WV

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	
See, John, P., P.E., P.S. Mining Engineer	20	30	20
Brief Explanation of Responsibilities			
Mr. See's responsibilities include technical oversight, and quality control for transportation and mining related projects throughout the state. Mr. See is a registered professional civil engineer and a registered professional surveyor. His experience covers numerous projects for mine development studies and mine production as well as refuse disposal and coal transportation. Work has included permitting for surface and underground mines as well as refuse disposal and preparation plant facilities. Duties ranged from reserve investigation and feasibility evaluation to mine development and subsequent daily mine production operations. Work experience has included railroad, bridge and highway design. Duties ranged from horizontal and vertical alignments, drainage computations, supervised drafting of construction plans, developed construction specifications, and estimated contract quantities for highway and railroad design. Work experience includes Associate Professor of Mining Engineering Technology, at West Virginia Institute of Technology in late 1970 and early 1980. During this engagement, Mr. See developed and presented course lesson plans and problem analysis sessions as well as assisted in the development of laboratory experiments and student advising. WVDEP 14387, Harrison County. Wet mine seals, the installation of bat gates, open channel design, culvert design, sediment control design, structure removal and reclamation, grading and revegetation. WVDEP 14439, McDowell County. Wet mine seals, open channel design,, culvert design, underdrains, sediment control design, reclamation grading and revegetation. WVDEP14800, Marion County. Drilling program development and the preparation of construction plans and specifications for the abatement of mine subsidence at four (4) sites in or near the City of Fairmont. The project "Fairmont Five Subsidence," included grout injection as well as surface depression regarding and minor drainage improvements. Assisted in the preparation of the Buffalo Mountain Surface Mine Permit application in Mingo County, Hill Fork Surface Mine Permit Application in Boone County and the Bragg Fork Refuse impoundment in Boone County.			
EDUCATION (Degree, Year, Specialization)			
B.S.C.E., 1967, Civil Engineering			
M.S.C.E., 1971, Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS			
American Society of Civil Engineers			
REGISTRATION (Type, Year, State)			
Professional Engineer, 1972, WV			
Professional Surveyor, 1995, WV			

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML DESIGN SERVICES

Various computer software and equipment (surveying and mapping) used by Michael Baker Jr., Inc. for ongoing projects are as follows:

HYDROLOGY

SEDCAD4 – Storm Routing through Detention Structures, Channel Design and Riprap Sizing.

TR20 – Project Formulation – Hydrology by SCS

TR55 – Urban Hydrology for Small Watersheds by SCS

HAESTADS POND2 – Storm Routing through Detention Structures

HEC1 – Flood Hydrograph Package by U.S.A.C.O.E.

HAESTADS QTRSS – Urban Hydrology for Watersheds

HYDRAULICS – OPEN CHANNEL AND CULVERT

HEC RAS/ - river Analysis System/Flood Plain Analysis/Water Surface Profile

HEC2 – Water Surface Profiles by U.S.A.C.O.E.

HY8 – Culvert Analysis by FHWA

FLOWMASTER – Channel and Pipeline Hydraulics by HAESTAD, Inc.

PIPELINE HYDRAULICS

WATERCAD – Water Distribution System Modeling

KYPIPE2 – Water Distribution System Modeling

CYBERNET – Water Distribution System Modeling

GEOTECHNICAL

STABL5M – Slope Stability

REAME – Slope Stability

SAMM – Loads on Concrete Pipe

DRAFTING AND SITE DESIGN

AutoCAD® – Civil 3d 2012 for Earthwork, Survey, Quantity, Calculations,

Terrain Modeling, Coordinate Geometry, Site Grading, etc

SURVEYING AND MAPPING

SURVEY EQUIPMENT AND SOFTWARE

Survey/Global Positioning System (GPS)
 Leica System 500 - SR 530 RTK - GPS Receiver
 Leica GS50 C/A Code Receiver with Racal Correction Service
 Trimble Pathfinder Pro XRS - with Omnistar Correction Service
 Trimble 4000SSI - Dual Frequency Receiver
 Trimble - RTK - Dual Frequency Receivers

<u>Pipe/Cable Locators</u>	<u>Total Stations</u>
Metrotech Model 9890	Topcon GTS 3B
CAT & Jenny Locators	Nikon DTM A5LG
Metrotech Model 810	Wild TC 2000

Total Stations with Onboard Data Collection

Leica TCRM 1103 – Motorized w/Reflectorless EDM
 Leica TCA 1103 - Robotic w/Auto-Target Recognition (ATR)
 High Precision Wild T3

Data Collectors

Trimble TSC2
 PENTAX SC5
 Leitz SDR33

Levels (Engineering)

Zeiss Ni 2
 Leica NA 2002 Digital Level w/2 rods
 Wild N-3
 Zeiss Ni 1

Magnetic Locators

Chicago Steel Tape - FT - 60
 Schoenstedt

Fathometer

1 – Innerspace Tech Model 456 – 200 KHz 8° Transducer

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML DESIGN SERVICES

Survey Software

Leica Ski-Pro, Version 2.0
Leica GIS Data Pro Version 1.20
Innerspace Technology Version 6.0 Data Logging with Guidance
Leica Survey Office Version 1.33
Trimble GPSurvey Version 2.35
Trimble Pathfinder Office Version 2.11
Leica – Liscad 6.00
Wild Soft Version 1.65
MicroStation Version SE or J
Eagle Point Version 99Q3

PHOTOGRAMMETRIC EQUIPMENT AND SOFTWARE

First Order Stereoplotters

Wild Aviolyt BC2 Analytical Stereoplotter
Leica SD 2000 Analytical Stereoplotter (Jackson, Mississippi office)
Wild PUG-4 Point Transfer Devices

Softcopy Stereoplotters

Z/I ImageStation SSK, Xeon GXI 2000, 2-450 MHz (Mexico City, Mexico office)
Z/I ImageStation ZIII, Xeon GXI 2000, 2-450 MHz
Sun ULTRA 60 360 MHz Ultra Sparc with SOCET Set Suite of Software
Z/I ImageStation SSK, PIII Xeon, 2-1.0 GHz
Z/I ImageStation SSK, Intel® Xeon™ Processor, 1.80GHz, 512K Cache

Digital Orthophoto

Dell PIII Xeon, 2-1.0 GHz
Intergraph TDZ425
Intergraph 6887 ImageStation (Stereo Softcopy Capability)

Scanner

Z/I PhotoScan-TD (TDZ 310) Resolution setting of: 7, 14, 21, 28, 56, 112 and 224 microns

DVD Writer

Pioneer - Model #DVR-S201-DVD-R Drive with Pioneer Crosswriter Version 2.0 and Prassi DVD REP Version 2.0 Software

CD Writer

Hewlett Packard HP Sure Store CD Writer 6020es
Software: Easy CD Pro 95 Version 1.0 and Easy CD Pro Win 3.1 Version 3.0

Server

Compaq Proliant 5500

Pentium II Processor Xeon 400 MHz
1.7 GB Memory
106 GB Disc Storage

External 40/80 Compaq DLT Drives

1.2 Terrabyte Network Attached Storage

Software

BINGO – AERIAL, version 4.0
MrSID, version 1.3
j f k RABATS/BRATS, June 1997
ABC32, version 1.3
IRAS – C, version 8.0
Adobe Photo Shop 5, version 5.05
CADDMAP/DGN, version 5.8.3
ERDAS Imagine, version 8.5
ImageStation Digital Mensuration-ISDM, version 4.0
ImageStation Base Rectifier-ISBR, version 4.0
ImageStation DTM Collection-ISDC, version 3.2
ZI Ortho Pro/Geo Media, version 3.1 MicroStation – J & SE versions

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML
DESIGN SERVICES

EDIT/DIGITIZING EQUIPMENT AND SOFTWARE

Workstations – Windows NT or Windows 2000

Pentium 4, 2 GHz

Pentium 2, 333 MHz

Pentium 2, 300 MHz

Pentium 2, 266 MHz

TDZ425

TD260MT

Scanners

ANA Tech Eagle 4050 – 500 dpi scanner

Hewlett Packard ScanJet 5100C

Plotters

JDL 3000 E

JDL 3500 E

Hewlett Packard 1055 CM

Hewlett Packard Design Jet 2500 CP-600 dpi

GIS Software

Intergraph – MGE/MGA, version 8 suite of products

MRF Mapping Tool Kit, version 8.0

ESRI: ARC/Info, version 8

ArcView, version 3.2

Arc View, version 3.1

AutoCAD, version 2000i

Oracle

Visual Basic, version 6

Visual Basic, version .NET

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
No. 6 Shaft Dewatering Pipeline Whitely, Pennsylvania	Cumberland Coal Resources, LP 158 Portal Road, PO Box 1020 Waynesburg, Pa 15370	Prepare permit submission, design, construction plans and proposed reclamation methods for dual dewatering borehole and pumps, lined holding pond, HDPE mine water pipeline from the underground mine sump to a coal refuse slurry impoundment including E&S control, HDPE pipeline, stream crossings, pond, and geomembrane pond liner.	\$49,400 (Fee)	95%
Emerald Refuse Area No. 3 Waynesburg, Pennsylvania	Emerald Coal Resources, LP 158 Portal Road, PO Box 1020 Waynesburg, Pa 15370	Prepare permit submission and construction plans for a coal refuse disposal site and slurry impoundment including E&S control, diversion and collection ditches, spillways, staging, and stability analyses.	\$778,279 (Fee)	98%
Development of a Long-Term Control Plan for Combined Sewer Overflow Abatement Pittsburgh, PA	City of Pittsburgh Department of Engineering and Construction Pittsburgh Water and Sewer Authority Pittsburgh, PA 15219	Historical Data Review, GIS Based Sewer System Mapping, GPS Mapping, CCTV Inspection, Flow Metering Installation, Water Quality Monitoring, Agency Coordination, and Public Involvement	\$7,500,000 (Fee)	98%
National Pipeline Mapping System GIS Database Repository Services and Digital Data and Map Distribution Nationwide	U.S. Department of Transportation's Research and Special Programs Administration and Office of Pipeline Safety, Washington, D.C.	Baker is maintaining the national geospatial data repository for the National Pipeline Mapping System (NPMS)	\$4,116,808 (Fee)	75%
General Environmental Consulting Services and Technical Support Contract Various Sites in Pennsylvania	Pennsylvania Department of Environmental Resources Harrisburg, Pennsylvania	Services include risk assessments, site investigations, remedial feasibility studies, remedial action design, construction inspection, Health & Safety, storage tank management, and industrial hygiene services	\$12,000,000 (Fee)	90%

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Design & Construction Management Services for the Coney Island Water Pollution Control Plant Upgrade	City of New York Dept. of Environmental Protection Elmhurst, New York	Baker, in joint venture with another firm, has been providing design, construction management and resident engineering services on a continuous basis since 1979 to upgrade the Coney Island Water Pollution Control Plant. The plant services an area of more than 22 square miles with a population of 690,500 and treats primarily domestic wastewater with some industrial and commercial wastes.	30,607,141 (Fee)	97%
TOTAL NUMBER OF PROJECTS:		TOTAL ESTIMATED CONSTRUCTION COSTS: \$55,051,628		
6				

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONSULTANT TO OTHERS

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRM'S RESPONSIBILITY
General Investigation Feasibility Study, Powell River Basin Lee County, Virginia	Feasibility level engineering design, cost estimating, and reporting for reclamation of numerous abandoned mine sites in the Powell River Basin	David Miller Associates 130 Park St SE Vienna, VA 22180	12/2010		\$79,071 (Fee)

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Davidson Highwall Project, Preston County, West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$107,000 (Fee)	2010	Under Construction
Wymer Portals Project, Preston County, West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$123,000 (Fee)	2010	Under Construction
Fort Gordon Mine Closure Sites, Fort Gordon, Augusta, Georgia	USACE, New Orleans District P.O. Box 60267 New Orleans, LA 70160-0267	\$110,000 (Fee)	2009	Phased Construction in progress
Chalk Mountain Mine Permit Renewal and Pit Mine Modification/Expansion, Spruce Pine, North Carolina	The Feldspar Corporation 530 Altapass Road Spruce Pine, North Carolina 28777	\$46,000 (Fee)	2008	Yes
Mine Dump Site Number Four Spruce Pine, North Carolina	The Feldspar Corporation 530 Altapass Road Spruce Pine, North Carolina 28777	\$75,000 (Fee)	2008	Yes
Miller Mountain Waterline Feasibility Study Preston County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$46,361 (Fee)	2008	NA (Study)
Borgman Refuse & Portals – AML Reclamation Preston County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$107,500 (Fee)	2007	Yes
Kempton Refuse and AMD Tucker County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$213,384 (Fee)	2007	Yes

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Lenox/Cuzzart Waterline Feasibility Study West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$48,699 (Fee)	2006	N/A (Study)
Lenox/Cuzzart Waterline Feasibility Study West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$48,699 (Fee)	2006	N/A (Study)
Buckeye Reclamation Landfill CERCLA Site, Remediation Design and Const. Mgt. Belmont County, OH	CONSOL Energy, Inc. 1800 Washington Road Pittsburgh, PA 15241	\$1,400,000 (Fee)	2005	Yes
Leslie (Nelson) Drainage and Portal West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$9,996 (Fee)	2005	N/A (Study)
Marmet, East Bank, Cabin Creek, and Mill Hollow Complex Drainage and Portals Kanawha County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$121,524 (Fee)	2008	Yes
Crooked Run #5 Drainage, Refuse and Portals Harrison County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$82,939 (Fee)	2009	Yes
Maybeury (Oakley) Landslide McDowell County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$54,683 (Fee)	2010	Yes
Fairmont Five Subsidence Marion County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$65,659 (Fee)	2010	Yes

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE)					
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
Powell River Ecosystem Restoration-Ely and Puckett Creek-Site 1, 3, and 4 Additions Lee County, Virginia	US Army Corps of Engineers, Nashville District	\$49,500 (Fee)	2007	Constructed	David Miller & Associates Vienna, Virginia

19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.

Michael Baker Jr., Inc. (Baker) has been providing abandoned mine lands (AML) reclamation and acid mine drainage (AMD) remediation since the federal government first enacted legislation. Our work experience in AML/AMD started with Operation Scarlift in the 1970's, and since 1983, we have been providing our engineering services in these areas to the West Virginia Department of Environmental Protection (WVDEP), Pennsylvania Department of Environmental Protection (PADEP), Ohio Department of Natural Resources (ODNR), and U.S. Office of Surface Mining (OSM), to name a few. Our recent experience on numerous AML reclamation and AMD remediation projects for the WVDEP, ODNR, PADEP and Nashville District of the U.S. Army Corps of Engineers, illustrates our track record for the completion of assignments on time and within budget.

Although the projects presented in the Project Experience Matrix of Attachment "C" of the Consultant Confidential Qualification Questionnaire (CCQQ) clearly show Baker's AML/AMD design, water system design, and related experience, they only hint at the extensive human and material resources which especially qualify our firm for this project. The following narrative further describes our experience and provides insight into the special capabilities of Baker.

Comprehensive Services

The civil and mining engineering, surveying and mapping, and environmental and geotechnical services of Michael Baker Jr., Inc. are available to immediately respond to the needs of WVDEP. Working from our Charleston, West Virginia office, which provides excellent highway and airline transportation, Baker can provide the full spectrum of services needed in water distribution system design as well as mine reclamation and mine drainage abatement operations. Some of the more important services our firm can provide to WVDEP include:

- ◆ Mapping and Aerial Photography
- ◆ Surveying
- ◆ Environmental Evaluations and Assessments
- ◆ Data Acquisition Interpretation
- ◆ Geotechnical Engineering
- ◆ Engineering Design
- ◆ Plan/Specifications Preparation
- ◆ Construction Management

Since we can furnish all of the engineering related services required for abandoned mine lands reclamation projects, we can work very efficiently and meet the strictest of schedules. Our efficiency is further heightened by the use of mapping systems and AutoCAD compatible design software to perform computer-assisted mapping, design and drafting.

Baker's aerial light detection and ranging (LiDAR) service provides an efficient and affordable high-definition solution to digital terrain model surface creation and planimetric feature collection. Baker owns and operates the latest in aerial LiDAR and positioning technology for outstanding productivity and survey efficiency. From a single aerial collection session, our aerial LiDAR system offers the ability to accurately capture and classify features that are important to you and the requirements of your project. With up to four range measurements, including first, second, third, and last return-point capture, you can be assured that all project data is accurately captured and available for classification

Baker LiDAR provides the ability to accurately and effectively capture point-cloud terrain data for orthophoto rectification and planimetric or topographic map compilation. Products can be delivered as bare-earth DEM files, with the option of upgrading to digital terrain models for contour generation.

Some of the functions applicable to design projects for which Baker routinely employs the LiDAR System and AutoCAD Civil 3D include:

- ◆ Contour Mapping of the Surface And Subsurface
- ◆ Facilities Layout and Site Design
- ◆ Earthwork Volume Computations and Cost Estimates
- ◆ Drafting of Plans Profiles and Cross Sections

The LiDAR System and AutoCAD Civil 3D Civil Design software are powerful cost saving tools for abandoned mine land projects since they can evaluate numerous configurations rapidly. They are especially useful for projects requiring extensive waterline plan and profile drawings and can interface with hydraulic models such as WaterCAD for analysis and design. They are also useful for projects requiring extensive backfilling and grading, such as may be required for water tank and pump station sites, and for the grading of refuse banks and gob piles, elimination of highwalls, and reclamation of other abandoned surface disturbances.

The experience of the key project personnel includes abandoned and active mine operations. Since we continually serve many of the country's largest coal and mineral producers as well as industrial clients and state environmental agencies, several personnel listed under Item 13 of the CCQQ also have experience in all phases of mining services, from survey, mapping, exploration and reserve analysis through mine planning, permitting, design, construction management, and final closure and reclamation. Since mining and reclamation projects (and WVDEP assignments in particular) comprise a large segment of our business, we work to assure that the mining services provided meet the needs and expectations of our clients and any regulatory agencies involved. Some of the many coal producers we have served are listed below:

- ◆ Consolidation Coal Company

- ◆ U.S. Steel Mining Co., Inc.
- ◆ Westmoreland Coal Company
- ◆ Emerald Coal Resources LP
- ◆ Cumberland Coal Resources LP
- ◆ Exxon Research and Engineering Company

To further demonstrate Baker's full service capabilities and experience, a recent AML project description is provided as follows:

◆ **State Funded Mine Reclamation and Pollution Abatement Projects – Kempton Refuse & AMD, West Virginia**

Michael Baker Jr., Inc. was retained by the West Virginia Department of Environmental Protection to prepare detailed design plans, and technical specifications for the Kempton Refuse & AMD project in Tucker County.

The primary purpose of the Kempton Refuse & AMD project is to reclaim the remains of the pre-law underground and surface mines in the project area and divert AMD through a passive treatment system before discharging to existing streams in order to rehabilitate the watershed, and in turn the North Branch of the Potomac River.

The project involved the reclamation of over 60 acres of exposed refuse and mine spoil, re-establishment of 4,400 LF of stream, and conveyance and treatment of numerous AMD discharges. Site reconnaissance was performed to identify mine seepage points and AMD sources, subsidence features, and potential soil borrow areas. A wetland delineation and stream assessment were performed to determine design parameters and mitigation requirements for regulatory compliance. A series of bore holes were drilled to determine underground conditions including characteristics of refuse, soil, and rock, and to determine the elevation of critical mine entries.

Plans and specifications were prepared for the reestablishment of the unnamed tributary, grading of spoil and refuse to provide positive drainage, collection of acidic seepage, sealing of mine entries, AMD conveyance and treatment, and soil covering and revegetation of refuse materials.

Specifications for revegetation and reforestation of selected areas included soil amendments, seed mixtures, tree plantings, and

mulching. Stream restoration designs required to reconstruct two unnamed tributaries in the Potomac watershed employed natural design techniques including a serpentine layout with pools and riffles.

The site included numerous mine seals and collection points to abate the AMD seepage. Mine seals consisting of clay seals, aggregate material, and PVC outlet pipes were proposed, with modified entries required to meet site specific artesian conditions. Conveyance pipes and limestone lined conveyance channels were provided to transfer AMD to a treatment system consisting of an equalization pond, successive alkalinity producing system (SAPS pond), and aerobic wetland. Project construction was completed in 2009.

Summary

As a large, diverse engineering firm, Baker has facilities available to properly conduct water distribution extension, abandoned mine land reclamation, and AMD remediation projects. The use of in-house facilities can speed project completion and facilitate tracking of progress. The in-house facilities include:

- ◆ Data Processing
- ◆ Interactive Graphics and AutoCAD
- ◆ Word Processing
- ◆ Printing and Reproduction

Baker's qualifications to provide engineering services for waterline and abandoned mine land projects, we offer the following response to the evaluation factors:

1. **Bidder Experience** in all aspects of surveying and mapping, subsurface investigation, and design engineering.

- ◆ Extensive experience in each area. Items 17 and 18 of the CCQQ describe various projects for which we provided these services during the last five years. Projects listed under item 12 of the CCQQ describes typical of various projects for which we provided our services to WVDEP.

- ◆ Strong capabilities in each area. Item 13 of the CCQQ lists our personnel by discipline. Our large multi-disciplinary staff is experienced in all aspects of water distribution and AML reclamation; civil, environmental, mining, geotechnical and reclamation engineering applied to surface and underground coal mining; land restoration; stream and water restoration; and land use and natural resources planning. The attached "Project Experience Matrix" show various projects performed for various clients and also show primary participants responsible for these projects.

19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.

2. **Qualification of Personnel** with respect to background, general experience, and experience relative to the requirements of the project.

- ◆ Baker's key personnel are registered professional engineers experienced in a broad variety of water distribution and similar projects, as indicated item 13 of the CCQQ.
- ◆ Our Project Manager and Project Engineers are veterans of many similar projects including past WVDEP projects.

3. **Corporate Specialized Experience and Demonstrated Abilities**

- ◆ Baker's specialized experience with AML related problems is summarized in the AML and Related Projects Matrix in Appendix C. Our work has addressed the full spectrum of AML problems including water projects for clients such as WVDEP, PADEP and others.
- ◆ The firm has a wealth of experience on similar projects, as evidenced by projects performed for mining and mineral companies. Moreover, Baker's transportation, site development, and water resource projects in the tri-state area often address AML problems.

20. THE FOREGOING IS A STATEMENT OF FACTS

Signature: _____

Title: _____

Vice President

Date: March 15, 2012

Printed Name: _____

Russell E. Hall, P.E., P.S.

ATTACHMENT "C"

AML AND RELATED PROJECT EXPERIENCE MATRIX

**STATE OF WEST VIRGINIA
PURCHASING DIVISION**

PURCHASING AFFIDAVIT

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this said affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Michael Baker Jr., Inc.

Authorized Signature: *[Signature]* Date: March 15, 2012

State of West Virginia

County of Kanawha, To-wit:

Taken, subscribed, and sworn to before me this 15th day of March, 2012

My Commission expires 4/14, 2013

AFFIX SEAL HERE

NOTARY PUBLIC *[Signature]*

